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## The Third Wave of the Internet

Audio books and classes are great for flights, cardio exercise, or driving around. So, we have gone through several from <http://www.thegreatcourses.com>. Recently, they added one from Steve Case of AOL fame called *The Third Wave: The Future of Entrepreneurship in America*. Without trying to give them some free advertising, we'll just say it's about 80 minutes in length for \$15.

The topic actually centers on the third wave for the Internet. Mr. Case tries to look at this like The Alvin Toffler book of the same name – *The Third Wave*, where Mr. Toffler used the past changes of the Agricultural Revolution and Industrial Revolution to forecast coming changes in the Information Revolution.

**The first wave of the Internet was building the infrastructure** over decades by the Department of Defense and then companies like Cisco, Hewlett Packard, and other hardware companies moving it to consumers with home computers. There were many chicken or egg battles fought as many pushed for Internet access for civilians and many pushed back asking, “Why would anyone want to?” Mr. Case noted that when they were working to create AOL, the first problem was it was illegal to go on the Internet. So, laws had to be changed for the first wave to even begin. Another battle was pleading with PC makers to build computers with modems in them. Again, the question was “Why would anyone need one?”

**The second wave of the Internet was building on top of the infrastructure.** Companies like Google and Facebook developed along with e-commerce. Not to belittle accomplishments in this wave, but this has been an easier period. We say that because regulation and laws trailed the new development and many ideas were touted as an improvement rather than being fought by many asking, “why would anyone go online in the first place?” There were billions made very quickly by writing apps that became hugely popular very quickly. It was relatively cheap to start companies based on niche applications. Companies largely could focus heavily on the product rather than the end-market. They also could wait to monetize it until it reached millions of users.

Mr. Case sees the third wave has started and it will be characterized by the Internet no longer being owned by the Internet companies. It will become much more ingrained in all parts of life and will cover much more than checking emails in a restaurant. People will no longer think much about it and it will become like electricity in terms of it reaching into all aspects of life. He sees this being much tougher to succeed and perhaps taking longer because there will be more barriers to overcome. **Demonstrating the value-add and a plan to market new solutions will be necessary and even then, it may be tough to get approval for a new company to operate.** By our observations, Mr. Case is essentially saying there will be considerable money made, but there will be much fewer overnight billionaires who simply created an app to allow people to exchange cat photos. Here is what he envisions for the Third Wave:

1. **It will disrupt huge areas of heavily regulated industries such as transportation, education, energy, healthcare, and finance.** That means laws will need to change and the disruptions will impact more than entertainment options. Fail-safes will need to be built and many more scenarios will need to be imagined and accounted for. Who cares if the text with the cat photo has a delivery failure, but if the driverless car fails to stop at the red light, that would impact lives. Because it will impact areas larger in life by moving them to the Internet, the scope of the change will be much larger overall and move bigger markets. Think of the second wave allowing people to read magazines online. The Third Wave will be how people will change their energy usage automatically when they leave or return home. That's a much larger market.
2. **The entrepreneurs are more likely to be experienced in industry rather than tech people.** They will have a better understanding of the products and customers and can identify problems, bottlenecks, and opportunities that a code writer would not. Mr. Case gave an example of a women who worked for a parts company and knew that many customers were getting the wrong part delivered. The customers didn't always know the name of the part or its catalog number. So, she talked to a tech friend and they created a new inventory recognition system that allowed customers to send in a picture of what they wanted. The system would identify the part and provide the name and number to fulfillment employees. This is an example of how people in the field can see problems long before people 1000 miles away can.
3. **Venture capital will move closer to the companies and industries where they are focusing.** Currently about 75% of all venture capital funding goes to California, New York, and Massachusetts. Internet entrepreneurs in the third wave are more likely to be found in Des Moines if they are working on agriculture or Tulsa if working on energy. This may also cut the cost of new companies with lower cost of living. It also

means more industry experienced people will talk through problems they are trying to fix.

4. **Partnerships will become a bigger phenomenon.** The partnerships can combine large companies and small ones. It may include large companies that are in danger of being disrupted by new technology and want to stay in front of that trend. **It adds more credibility** when instead of saying, “Seth Smith has a new business that will change how doctors diagnose cancer” the story becomes “Humana and Met Life have joined Seth Smith in rolling out a new cancer diagnosis program.” **The Partners can also bring more expertise** in understanding the market as well as simply running a business and providing back office support. Mr. Case does not think there will be as many 2-3 man-shops creating an app in the third wave because the scope will be too large and too many barriers to market will exist. He cited Apple rolling out the iTunes store as an example. Apple disrupted how music was sold, but it created partnerships with participants in the music industry first like Warner Brothers to gain scale and product. Even the tech may be outsourced to a large degree as the ideas around the product and getting market acceptance will be more important than the actual coding.
5. **Policy will become a bigger issue. Government and industry will need to be on board early on.** This will likely also gain help from partnerships as larger companies may have experienced people and legal teams to navigate this area. Some of the disruption will impact areas government operates too – think of Uber being denied the ability to operate in Austin, TX because the cab companies pay the city for operating licenses and Uber did not. Industry experience will play a role here too as people with a history of the issues will know what failed and what has worked in the past and understand the current parameters government has in place.
6. **Perseverance will be needed. There will be fewer overnight successes and it may require pushing a team of several dozen people forward in many directions** to handle concerns from suppliers, government, customers, and partners. The second wave meant creating software to sell movie tickets online. The third wave will mean using the Internet to allow one trained nurse to oversee thirty inexperienced people handling more routine issues such as drawing blood or changing dressings on wounds. This is also where the expertise in industry, credible partners, deeper pockets, and knowledge of the laws will also come into play.
7. **Gate Keepers will need to be overcome such as government rules and administrative people** who won’t know how to classify employees at a joint venture. Wall Street will

also have to be overcome. Projects that take years to develop and implement do not fit into analysts' models and they don't fit into executive pay formulas. School districts make decisions on what goes into a classroom, not an individual teacher or principal.

8. **Obstacles will be bigger than computer hardware and software in the second wave.** Logistics will need to be worked out, entrenched players will resist, laws may need to be rewritten, new training will be required, how to classify outsourced employees, barriers to market will exist such as how to deal with taxi-cab licenses vs. Uber. Think about replacing the current school system, federal money allocation, and tenure. There will be much more to overcome than “how do we get the local newspaper online?”
9. **More reinvention within companies will need to continually happen. Disruption will come quicker to companies and hit many more that were thought immune to technology changes.** Jobs will be lost, but many new ones will be created, and the world has gone through this many times. ATMs at banks eliminated many bank teller jobs. However, new ones emerged, and banks now employ more people than before with more skills. Mr. Case thinks we will see more companies develop internal groups to look for new start-ups to partner with and always be looking at creative destruction within the firm. More long-term thinking will be necessary in his view. For example, Apple introduced the iPad and that cut into MacBook sales. The iPhone wiped out the iPod. New markets may be bigger and with longer lives than what they are replacing.
10. **The product won't be an app. There will be much more team work from people with very different skill-sets.** The product will be fixing greater issues and moving full systems to the Internet. The time to market and the payback ROI will likely be much longer but may be greater overall than the 2nd wave apps.

We believe Mr. Case is painting a picture that the Third Wave will be much more like the first wave and will likely require heavy infrastructure investment. That means more fiber to carry more data at higher speeds. It may mean more electronics in roads and bridges. It could mean more satellites and greater demands on security. With his view of things taking longer to come to market, he's also painting a picture more of a pipeline operating model – spend years building a new system and paying for it all that time without generating a dime until it finally turns on and capital spending goes to basically zero. That could create some bigger changes in cash flow at many companies if that level of investment is chased.

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